

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. *(Previously Presented)* A packaged integrated circuit, comprising at least one radio frequency component included in an integrated circuit die directly connected by wire to a radio frequency antenna, said integrated circuit die being included in said packaged integrated circuit, wherein said radio frequency antenna comprises a portion of the package of said packaged integrated circuit and is excluded from said integrated circuit die.

2. *(Previously Presented)* The packaged integrated circuit according to claim 1, wherein said packaged integrated circuit comprises an integrated circuit package which houses said at least one radio frequency component and wherein said radio frequency antenna comprises at least one metal object that is a portion of the package of said packaged integrated circuit.

3. *(Cancelled)*.

4. *(Previously Presented)* The packaged integrated circuit according to claim 2, wherein said radio frequency antenna is disposed on a metal frame of said integrated circuit package.

5. *(Previously Presented)* The packaged integrated circuit according to claim 1, wherein said radio frequency antenna comprises at least one planar metal pattern separated from a grounded metal plane by an insulating layer.

6. *(Previously Presented)* The packaged integrated circuit according to claim 5, wherein said planar metal pattern is a metal slot-pattern and said insulating layer is a ceramic layer.

7. *(Previously Presented)* The packaged integrated circuit according to claim 6, wherein said slot pattern comprises a first S-shaped slot.

8. *(Previously Presented)* The packaged integrated circuit according to claim 7, wherein said radio frequency antenna comprises a second S-shaped slot rotated 90 degrees with regard to said first S-shaped slot.

9. *(Previously Presented)* The packaged integrated circuit according to claim 1, wherein said integrated circuit package is a Ball Grid Array package.

10. *(Previously Presented)* The packaged integrated circuit according to claim 1, wherein said integrated circuit package is a Quad Flat Pack package.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLN. NO. 09/784,015
ATTORNEY DOCKET NO. Q62388

11. (*Previously Presented*) The packaged integrated circuit according to claim 1, wherein said integrated circuit package is a Small Outline package.

12. (*Previously Presented*) A radio frequency module comprising at least one packaged integrated circuit according to claim 1.

13. (*Previously Presented*) A packaged module, comprising:
an integrated circuit die having at least one radio frequency component;
a radio frequency antenna;
a shield interposed between said integrated circuit die and said radio frequency antenna, wherein said integrated circuit is directly connected to said radio frequency antenna by metal wiring routed through said shield, and
wherein said radio frequency antenna comprises a portion of the package of said packaged module and is excluded from said integrated circuit die.

14. (*Previously Presented*) The module according to claim 13, wherein said radio frequency antenna is comprised of metal.

15. (*Previously Presented*) The module according to claim 13, wherein said radio frequency antenna comprises at least one planar metal pattern separated from a grounded metal plane by an insulating layer.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLN. NO. 09/784,015
ATTORNEY DOCKET NO. Q62388

16. (*Previously Presented*) The module according to claim 15, wherein said planar metal pattern is a metal slot-pattern and said insulating layer is ceramic layer.

17. (*Previously Presented*) The module according to claim 16, wherein said slot pattern is a first S-shaped slot.

18. (*Previously Presented*) The module according to claim 17, wherein said radio frequency antenna comprises a second S-shaped slot rotated 90 degrees with respect to said first S-shaped slot.

19. (*Previously Presented*) The module according to claim 13, wherein said radio frequency antenna comprises a plurality of via holes arranged around the periphery of said antenna.

20. (*Previously Presented*) The module according to claim 19, wherein two of said plurality of via holes are disposed opposite each other on said periphery of said antenna.

21. (*Previously Presented*) The module according to claim 13, further comprising an integrated circuit package having a metal frame, said integrated circuit package encapsulating said shield and said integrated circuit die.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLN. NO. 09/784,015
ATTORNEY DOCKET NO. Q62388

22. *(Previously Presented)* The module according to 21, wherein said radio frequency antenna is disposed on said metal frame of said integrated circuit package.

22. *(Previously Presented)* The module according to 21, wherein said radio frequency antenna is disposed on said metal lead frame of said integrated circuit package.

23. *(Previously Presented)* The module according to claim 13, wherein said integrated circuit package is a Ball Grid Array package.

24. *(Previously Presented)* The module according to claim 13, wherein said integrated circuit package is a Quad Flat Pack package.

25. *(Previously Presented)* The module according to claim 13, wherein said integrated circuit package is a Small Outline package.

26. *(Previously Presented)* The module according to claim 13, wherein said shield is connected to an electrical ground.

27. (*Previously Presented*) The packaged integrated circuit according to claim 1, wherein the length of said wire is $\frac{1}{4}\lambda$ to $\frac{1}{2}\lambda$, wherein λ represents the wavelength of a transmitted or received radio signal.

28. (*New*) The packaged integrated circuit according to claim 1, wherein said radio frequency antenna comprises means for determining an antenna resonance frequency.

29. (*New*) The packaged integrated circuit according to claim 28, wherein said radio frequency antenna comprises means for suppressing higher order resonances.

30. (*New*) The module according to claim 13, wherein said radio frequency antenna comprises means for determining an antenna resonance frequency.

31. (*New*) The packaged integrated circuit according to claim 30, wherein said radio frequency antenna comprises means for suppressing higher order resonances.